

Claims

[c1] WHAT IS CLAIMED IS:

1.A projectile, comprising:

an imaging seeker at a front of the projectile;

a front warhead behind the imaging seeker;

a power supply;

an electronics unit connected to the power supply and comprising a microprocessor

circuit board, a voltage regulator circuit board, an inertial measurement circuit board and a fuze and safe and arm circuit board, all electrically connected to each other, the microprocessor circuit board also being connected to the imaging seeker;

a rear warhead, the front and rear warheads being electrically connected to the safe and arm circuit board;

a rocket motor electrically connected to the electronics unit;

foldable fins mounted at the rear of the projectile;

a shell that encases the front warhead, the power supply, the electronics unit, the rear

warhead and the rocket motor; and

a maneuver mechanism disposed in the shell and electri-

cally connected to the
microprocessor circuit board.

- [c2] 2.The projectile of claim 1 wherein the imaging seeker is an infrared imaging seeker.
- [c3] 3.The projectile of claim 1 wherein the front and rear warheads comprise a high explosive.
- [c4] 4.The projectile of claim 1 wherein the shell comprises aluminum.
- [c5] 5.The projectile of claim 1 wherein the rocket motor is behind the rear warhead.
- [c6] 6.The projectile of claim 1 wherein the rear warhead is behind the rocket motor.
- [c7] 7. The projectile of claim 1 wherein the power supply comprises batteries.
- [c8] 8.The projectile of claim 1 wherein the power supply comprises a capacitor.
- [c9] 9.The projectile of claim 1 wherein the maneuver mechanism comprises a plurality of explosive squibs disposed circumferentially around the projectile and radially outward from an approximate center of gravity.

- [c10] 10. The projectile of claim 9 wherein the maneuver mechanism further comprises the foldable fins.
- [c11] 11. The projectile of claim 1 wherein the imaging seeker comprises an infrared transparent ogive, a lens assembly and a detector.
- [c12] 12. A munition comprising:
a fire control system including an infrared imager;
a gun launch tube;
a knockout charge disposed in the gun launch tube;
an optical fiber connecting the fire control system and the gun launch tube; and
the projectile of claim 11 disposed in the gun launch tube above the knockout charge.
- [c13] 13. The munition of claim 12 wherein the projectile is positioned in the gun launch tube such that the optical fiber is adjacent the transparent ogive of the imaging seeker.
- [c14] 14. The munition of claim 12 wherein the projectile further comprises an optical coupling ring disposed circumferentially on the outer surface of the projectile and wherein the projectile is positioned in the gun launch tube such that the optical fiber is adja-

cent the optical coupling ring.

[c15] 15. A method of using the munition of claim 12, comprising:

- scanning an area that includes a target and target reference points using the infrared imager of the fire control system to produce an infrared image;
- resizing the infrared image;
- transferring the resized infrared image to the projectile;
- launching the projectile;
- updating a fuze function time based on a comparison of an actual muzzle velocity and a standard muzzle velocity;
- damping a projectile angular motion using the maneuver mechanism;
- firing the rocket motor;
- turning on the imaging seeker;
- correcting the projectile course using the maneuver mechanism; and
- detonating the front and rear warheads at a target location.

[c16] 16. The method of claim 15 further comprising, after firing the rocket motor, updating the fuze function time based on a comparison of an actual delivered impulse and a standard impulse.

[c17] 17. The method of claim 15 wherein the step of launching the projectile includes launching the projectile using the knockout charge.

[c18] 18. The method of claim 15 wherein the step of transferring the resized infrared image to the projectile includes transferring the resized infrared image using the optical fiber.